UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/804,435 | 03/18/2004 | Terry Mitchell Kuta | Kuta.T-01 | 7286 |

22197 7590 09/11/2007
PATENT LAW & VENTURE GROUP
2424 S.E. BRISTOL, SUITE 300
NEWPORT BEACH, CA 92660

| EXAMINER | |
|---|---|
| PADGETT, MARIANNE L | |
| **ART UNIT** | **PAPER NUMBER** |
| 1762 | |

| MAIL DATE | DELIVERY MODE |
|---|---|
| 09/11/2007 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/804,435 | KUTA, TERRY MITCHELL | |
| | Examiner | Art Unit | |
| | Marianne L. Padgett | 1762 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *14 August 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-4* is/are pending in the application.

4a) Of the above claim(s) *3 and 4* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-2* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. Applicant's election with traverse of group I, method claims 1-2 in the reply filed on 8/14/2007 is acknowledged. The traversal is on the ground(s) that applicant believes that the inventions are not independent & distinct alleging that the present method cannot be practiced with a materially different apparatus. This is not found persuasive because the steps of the method claims which employ a "fine grit sanding disc" in oscillating motions & flush water over the surface being sanded, as claimed may be done manually & do not require a tool with the claimed drive means, drive shaft, etc., as required in the apparatus claims. Furthermore, the refinishing process is also directed to polishing & coating, with UV treatment, actions or steps which do not involve the apparatus of claims 3-4, thus the refinishing tool apparatus claimed therein, can be used in processes which are applying different coatings that are not UV cured, or on structures other than headlights, hence by statute these are indeed independent and distinct inventions. Applicant further alleges that examining both sets of claims would place no further burden on the examiner, however having to search for a specific structure or mechanism of a sanding apparatus is an entirely different search, than looking for a process that discusses a sequence of sanding, polishing, coating & UV curing procedures. The examiner notes the inventor's comments (e-mail attached to 8/14/07 response) concerning the impracticality of sanding by hand (difficult to teach, time-consuming & the improbability of achieving consistent results), however these concerns do not limit the claims, which as written do not require the apparatus. The examiner further notes that while she has many years of experience in the coating art for processes employing UV curing, she knows virtually nothing about sanding apparatus structure, and one of the purposes of the restriction system is to attempt to insure that as much as possible the elected claims go to the examiner with the appropriate expertise, hence if apparatus had been elected, this examiner would have transferred the apparatus claims to an examiner who works in the art that examines sanding apparatus. Since an examiner is only given a set allotted amount of time for each case, examining two different sets of claims, which have entirely different criteria to consider for their patentability, places a significant extra burden on the examiner, with no extra

time in which to perform the examination (i.e. may resulted in a deficient job if done in only the time given, or shorting someone else's examination, or not making the required quota of work, which may lead to firing, or working overtime for free).

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 1-2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The preamble of claim 1 separately introduces "A plastic lens" and "abraded headlight lenses", such that while in line 2 "each said the headlight lens" clearly refers back to "abraded headlight lenses", it has no **necessary** relationship to "plastic lens", but in line 3 "the lens" & subsequent recitations thereof, have ambiguous antecedents to either plastic lens or headlight lens, which as claimed may or may not be the same thing, making the scope of the claim unclear, i.e. it is unclear whether the lens is required to be plastic or not.

Use of relative terms that lack clear metes and bounds in the claims, or in a clear definition provided in the specification or relevant cited prior art, is vague and indefinite. In the claims, see the relative terms "fine", "ultra fine" & "ultra-ultra fine" describing "grit sanding disc " or "grit sanding pad", for which no clear definition was found in the body of the specification. It is noted that page 4, lines 10-13 discuss a process that uses a succession of 3 numerically designated grits for sanding of 320, 600 & 1500 (no units, although the examiner notes that these are numerical designations often used for grades of sandpaper or the like), which on page 6 (top half) are given as examples or types of "fine", "ultra fine" & "ultra-ultra fine" grits, respectively, but on page 7 those same grit numbers are described as "fine", "extra fine", & "ultra fine", respectively, thus the relative phrase designations are not consistently used within the specification, thus cannot be considered to have any sort of clear designation or definition therein.

A further relative term found in the claims is "high" used in describing "high gloss" achieved via the polishing step, however the claims do not define what degree of gloss constitutes "high", nor was a definition found in the specification, such as where the term is used on page 7, lines 15-17, thus this term lacks clear metes and bounds, so is vague and indefinite.

It is noted that if the terms fine, ultra fine & ultra-ultra fine used to describe sanding grit for the refinishing art have art recognized meanings, supplying a **prior** art reference to the application's record, which defines those meanings in the appropriate context, may be used to clarify the issue for the claims & specification. Similar considerations may be applied to the term high gloss.

In part a) of claim 1 (lines 6-7), the phrase "for exposing a non-abraded surface of the lens" is not a positive claim requirement, hence it is unclear whether this action is only possible or required. A further issue of clarity might be word choice in that the act of sanding can be considered to be causing abrasion, such that any place one sands is being abraded, hence cannot be "a non-abraded surface", however the examiner's understanding of applicant's intent is that the purpose is to remove abrasion damage, such as grooves or scoring in the plastic lens, thus sand the damaged area so that that damage is removed from the surface such that a level or undamaged surface is produced.

With respect to sanding criteria in parts b) & c), since the ultra fine grit limitation requires "halting sanding when the lens appears clear", this would indicate that the criteria claimed in the ultra-alter fine grit limitation of "until limited access corners of the lands are clear" was already met, if one did the ultra fine grit sanding before the ultra-ultra fine grit sanding. The examiner finds it doubtful that this was applicant's intent, but it is what the claimed language would require as written. Applicant may also wish to note that order of listing limitations does **not** necessitate that those steps or actions were done in the order listed, unless the claimed language requires that order, such as via temporal limitations (then, next, etc.) or via language showing antecedent basis. Note claim 1 as written does not actually require the ultra fine grit to be employed before the ultra-ultra fine grit, so the second "clear" limitation is not

necessarily preempted by the preceding one in part b), but as such a sequence of performing the claimed limitations is highly unlikely to be applicant's intent, amending the claimed language to remove these apparent logic problems may be found desirable.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foster (5,194,293), in view of Miyazawa (2002/0043710 A1), optionally in view of Lindholm et al. (5,632,668) especially for claim 2.

Foster teaches what repairing weathered plastic surfaces, inclusive of those on vehicle lights, where mild abrasives are used to polish the surface, removing scratches & other imperfections from the surface, where good results are taught to be achieved using a fine grit wet/dry sandpaper, preferably 220-600 abrasive grit, with cleaning solution optionally included with the mild abrasive. The thus cleaned & polished surface of the plastic article is wiped dry and a layer of ultraviolet curable material is applied, that is hardened as it is exposed to ultraviolet light, creating a hard and protective surface on the plastic article. In Foster, see the abstract; col. 1, lines 10-23 & 38-47; col. 2, lines 16-41; col. 3, lines 10-35 & 45-col. 4, lines 41, especially col. 3, lines 18, 42-56 & 61-63+. Foster differs by not discussing details of the sanding/polishing process, such as particular shapes for the sanding tool (sandpaper), motions made therein, nor requiring specifically 3 sanding steps of successively finer grit, with flushing and particular endpoints, plus subsequent use of a buffing compound.

Miyazawa provides teachings concerning the smoothing & polishing to a mirror finish of convex or concave plastic surfaces, such as various types of lenses, where the description of the process with respect to plastic spectacle lenses is provided as representative. Miyazawa et al. teach that in sanding and

polishing of such plastic surfaces, it is conventional to use a rough grinding stage, a fining stage & a stage where polishing with a slurry creates the mirror surface, where depending on the roughness of the initial sanding two or more fining stages may be employed. It is further taught that sanding is conducted while pouring water, and taught "pad" shapes include those with notched portions (figure 7 illustrates 7 grooves) that allow the passing of water. Motions taught for the surface treatment include rotation combined with lateral oscillation, which the examiner notes would insure even treatment & coverage of the surface. Particularly see the abstract; figures 3-4 & 7; [0003-4]; [0009]; [0030-32] [0039-41]; & [0054]. While the pad or disk described in Miyazawa is particularly directed to the polishing step, the background discussions of the sanding steps are also said to use pads, thus similar shaped pads or disks would have been expected by one of ordinary skill in the art to be useful in all of these smoothing stages.

As the primary reference to Foster does not give details on the sanding/polishing process, other than it is required to smooth out scratches or the like present in the surface being refinished & prepare the surface for subsequent protective coating, it would have been obvious to one of ordinary skill in the art to employ sanding & polishing procedures known in the art for sanding & polishing plastic lenses, such as those taught by Miyazawa. Note that while the secondary reference to Miyazawa employs the example of plastic spectacle lenses, this was taught to only be representative, such that the generic teaching directed to concave & convex surfaces, with exemplary listing of a wide variety of lenses would have suggested to one of ordinary skill that the process would have been expected to be applicable to any such surface, where one of ordinary skill would have been expected to adapt the techniques via routine experimentation to be compatible with the specific plastic substrate or plastic shapes being treated, thus while Foster is repairing an already shaped substrates such as vehicle lights, the sequences of smoothing steps (two or more sanding, while pouring water, plus polishing the slurry), with motions taught for appropriate treatment would have been expected to be effective & desirable in the process of Foster in order to appropriately smooth and polish plastic substrate being repaired, considering that for the repair of used

objects like vehicle lights, a greater variety of shape would have been expected that would be found on a manufacturing assembly line, as well as larger size than the exemplary spectacle lenses, hence one of ordinary skill would reasonably adapt the sequences of steps as taught in Miyazawa keeping these conditions in mind, such as using the automobile or an appropriate stationary clamp to hold the vehicle light fixture, and employ the relative motions taught in Miyazawa by moving sanding/polishing apparatus. While Miyazawa does not discuss the flushing waters clarity or its effect with respect to melting of the surface, it is old and well-known in the art of sanding plastic that cooling lubricant is necessary to prevent excessive heating, with water commonly used for that purpose, where that water also is known to be employed for removal of sanding debris, hence it is considered within the realm of one of ordinary skill in the art to visually detect when each stage of sanding has been sufficiently preformed, as described in the claim limitations with respect to debris present in the flushing water for the coarsest sanding, and the degree of clarity itchy for the finer sanding stages, where it is noted that it would've been reasonable to expect that small areas that are sterically hindered, such as corners, would have taken longer to achieve desirable clarity. With respect to the diameter of pads or disks employed, choice of size would have been expected by one of ordinary skill in the art to depend on the size of the particular article being treated, and with that taken into consideration either forming/cutting a disk of a compatible size, or using a standard size abrasive disk/pad within a range of sizes related to the article size(s).

Optionally, Lindholm et al. (668) provides similar teachings concerning conventional smoothing & polishing operations (coarse grinding, 2 fining steps followed by polishing) with mention of various possible optical components, including lenses (col. 1, lines 10-22 & 34-63), provides discussion of test procedures that employ a standard die for cutting 3 inches diameter "daisies" for abrasive articles used for polishing lenses, which is described as inclusive of two fining steps & polishing, where flooding with water is employed during the processing (col. 20, lines 61-col. 21, line 30), hence further showing that the claimed sequence was well-known, hence obvious, with the additional teaching that the claimed 3 inch

diameter is a standard size used for abrasive pads and disks, intended for concave & convex substrate treatment, such that it would've been further obvious for one of ordinary skill in the art to employ such a standard size abrasive tool in the combination as discussed above.

5. Other art that interest includes: Wiand (4,288,233 & (et al.) 6,089,963) directed to two-stage grinding with what sandpaper & flow of water, then polishing for plastic lenses; Takizawa et al. (5,104,421) teaching polishing of plastic substrates, including lenses & auto parts, employing abrasive pads (various "daisy" shapes), water flushing, with teachings on the importance of grain size; Duescher (2002/0061723 A1: [0003-5]; [0160-162]; [0195]; [0229]; & end of [0237]) having various teachings on the importance of the shape of the abrasive material, including with respect to coolant flow & debris removal; Zuk (4,301,193), with teachings similar to Foster, but without the coating being UV curable; Squitieri (2002/0071957 A1: figure 3; [0004-6]; [0011]; & [0017-22]) directed to refurbishing & removing scratches from glass on vehicles, including where that glass already has a plastic coating, via sanding (manual or auto, orbital or belt sanders mentioned), with final protective UV curable coating; Colton et al. (6,423,381 B1: col. 7-8) & Adickes (2004/0157758 A1: [0028-34]; [0037+] & [0047+]) have teachings similar to Squitieri; Mucci et al. (5,913,716: col. 2, lines 4-15; col. 6, lines 23-33+; & col. 8, lines 66-col. 9, line 28+) has teachings concerning smoothing the surface of the substrate, including teaching that it is conventional to use a consecutively smaller series of abrasives till a desirable "scratch size" is reached, plus teachings using disks or "daisies" for polishing, and movements employed with the abrasives inclusive of movement in two directions, such as rotational & perpendicular; N. Ellis (Info Tips and Tricks) having teachings concerning the importance of working one's way from courser through finer grits to achieve desirable finish, mentioning conventional sandpaper grades; Kropp et al. (7,045,001 B1), Maillie (6,984,612 B2) & Stowell (5,443,604), who teach various polishing techniques applicable to restoring headlights &/or plastic; Cole et al. (7163446 B1) & Kraus-Heringer et al. (2007/0171242 A1) also directed to the refurbishing of headlights, but which are not prior art.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marianne L. Padgett whose telephone number is (571) 272-1425. The examiner can normally be reached on M-F from about 8:30 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks, can be reached at (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MLP/dictation software

9/4-6/2007

MARIANNE PADGETT
PRIMARY EXAMINER